

REMARKS

Applicant appreciates the thorough examination of this application as evidenced by the Office Action. After a thorough review of the prior art references cited in the Office Action, previously elected Claims 22-30 and 39-47 are now canceled and Claims 31-33, which are readable on Figure 4 (Species C), are now elected. Claims 31-33 have been amended to clarify their bases for patentability over the cited references and Claims 48-49 have been added. Claims 1-30 and 34-47 are now canceled. Accordingly, Applicant requests consideration and allowance of Claims 31-33, 48, and 49 in view of the following remarks.

The objections to Claims 23-30, 41, 42, and 44-47 have been rendered moot by the cancellation of those claims.

The rejections of Claims 30 and 47 under 35 U.S.C. Sec. 112 have been rendered moot by the cancellation of those claims.

Claim 31 has been amended to independent form and now recites:

31. A method for building a disk stack for inclusion in a magnetic disk drive, the method comprising:
providing a spindle;
mounting on the spindle at least two disks having inner sleeve-like openings with an inner diameter slightly larger than an outer diameter of the spindle, longitudinal spacers providing spaces between pairs of adjacent disks mounted to the spindle along a portion of the length of the spindle, wherein at least two of the disks each have an inner diameter surface that forms at least two lateral protrusions that protrude radially inward toward the spindle; and
biasing the disks toward a side of the spindle so that apex portions of the at least two lateral protrusions contact an outer diameter surface of the spindle at lateral spacing points of contact.

Accordingly, the disks have lateral protrusions that protrude radially inward toward the spindle. The disks are also biased toward the spindle so that apex portions of the at least two lateral protrusions contact an outer diameter surface of the spindle at lateral spacing points of contact.

In contrast, U.S. Patent No. 5,548,454 to Kawakubo et al. (hereinafter "Kawakubo") teaches that a spindle 50 has projections 41-44 which project radially outward to mate with recesses 31-34, respectively, in a disk 10. (See FIG. 5 of

Kawakubo). Nowhere does Kawakubo teach or suggest that an inner diameter surface of the disk 10 itself can have lateral protrusions that protrude radially inward toward the spindle 50.

U.S. Patent No. 5,333,080 to Ridinger et al. (hereinafter "Ridinger") has been cited for its teaching of the use of sleeves 44 between adjacent disks 8. Applicant submits that Ridinger also does not teach or suggest that an inner diameter surface of the disks 8 can have lateral protrusions that protrude radially inward toward a spindle.

For at least these reasons, Applicant submits that independent Claim 31 is patentable over Kawakubo in view of Ridinger.

New Claim 48, which is based on Claim 39, recites:

48. (New) The method of Claim 31, wherein biasing the disks toward a side of the spindle so that apex portions of the at least two lateral protrusions contact an outer diameter surface of the spindle at lateral spacing points of contact comprises:

holding the spindle at a tilted non-zero angle relative to horizontal; and

arranging the disks so that the at least two lateral protrusions of the at least two disks protrude downward relative to horizontal and weight of the disks biases the disks toward the spindle so that the apex portions of the at least two lateral protrusions contact the outer diameter surface of the spindle at lateral spacing points of contact.

The Office Action concedes on Page 6, with regard to its rejection of now withdrawn Claim 41, that Kawakubo does not disclose holding the spindle at a tilted non-zero angle relative to horizontal. However, the Office Action then cites to U.S. Patent No. 5,101,306 to Johnson as teaching a tilted disk assembly fixture apparatus.

Applicants submit that Johnson teaches that disks 18 are mounted to a hub 20 which serves as a spindle. Both the inner diameter of the disks 18 and the outer diameter of the hub 20 have smooth cylindrical surfaces. Johnson does not teach or suggest that an inner diameter surface of the disks 18 can have lateral protrusions that protrude radially inward toward the hub 20. Moreover, Johnson attempts to solve the problem of alignment of the disks 18 and hub 20 using posts 50 which abut an outer diameter surface of the disks 18. More particularly, Johnson describes that that the

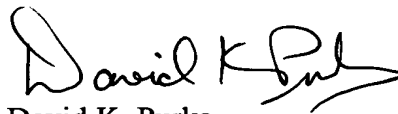
posts 50 are used to center the disks 18 relative to one another and with the hub 20.
(See Johnson, Col. 5, lines 18-27, and FIG. 12).

Because Johnson and Kawakubo do not teach or suggest that an inner diameter surface of a disk can have lateral protrusions that protrude radially inward toward a spindle, they also cannot teach or suggest that while holding a spindle at a tilted non-zero angle relative to horizontal, that the disks are arranged so that the at least two lateral protrusions of the at least two disks protrude downward relative to horizontal and weight of the disks biases the disks toward the spindle so that the apex portions of the at least two lateral protrusions contact the outer diameter surface of the spindle at lateral spacing points of contact.

For at least these reasons, Applicant submits that Claim 48 is patentable over Kawakubo in view of Johnson and Ridinger.

In light of the above amendments and remarks, Applicant respectfully submits that the above-entitled application is now in condition for allowance. Favorable reconsideration of this application, as amended, is respectfully requested. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney at (919) 854-1400.

Respectfully submitted,



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In re: Michael Mallary
Application No.: 10/630,265
Filed: July 30, 2003
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